

REMARKS/ARGUMENTS

With this amendment, claims 14-22 are pending, claims 1-13 are cancelled, and claims 23-26 are newly added.

In the Office Action, the Examiner rejected claims 1, 3-22 under 35 U.S.C. § 102(e) for allegedly being anticipated by Hainberger (U.S. Patent Application Publication No. 2004/0004756, hereafter "Hainberger").

Claim 2 was rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over Hainberger.

Regarding claims 14-22, the Examiner states in the Office Action,

Hainberger teaches a method for transmitting an optical signal comprising: receiving a transmitted optical signal as a received signal, the received signal being transmitted over a first optical fiber path[;] separating the received signal to produce a plurality of bands...each separated band comprising optical signals of different wavelength (Figure 4); and adjusting the total power of each band to make the total power of each band substantially equal with each other (Figure 5), and adjusting the power of optical signals in each band to compensate fro [sic] level variance in the band (Figure 5).

However, in contrast to the assertion of the Examiner, Hainberger does not teach all elements of claims 14-22. "A claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), *emphasis added*.

Applicants assert the Hainberger does not teach (or suggest, for 103(a) purposes) all elements of the claims, in particular, the *predetermined optical intensity parameters* and *predetermined gain tilt parameters* elements found in each of the claims 14-22. A key distinction between claims 14-22 and Hainberger is that the claims recite predetermined optical intensity and gain tilt parameters, in a feed-forward mode (see pages 10-14 of the specification for exemplary algorithms for computing these predetermined parameters), while Hainberger uses a monitored value to control the Raman pump in a feedback mode.

Particularly, Hainberger is directed to monitoring the separate bands and controlling repeaters based upon the presence of energy in each band. Hainberger states,

[0063] According to one aspect of the present invention, additional Raman pump light sources are provided in the amplifier stages. These sources are off when the S+ and the S band are in full service. *Photodiodes monitor the power levels of the S+ and S bands. Depending on the position of the photodiodes the control signal is used to switch on/off the substitute Raman pump laser diodes in the same repeater node or in the previous or next one node.* The photodiodes can either be located before or behind the amplifier. Thus, it is possible to maintain a reliable C/L band transmission also without full operation of the S+ and S band channels. (Page 4, emphasis added.)

In contrast, generally as recited in claims 14-22, an intensity of at least one optical band is adjusted according to the predetermined optical intensity parameters, and a gain tilt of the optical band is adjusted according to the predetermined gain tilt parameters. The predetermined optical intensity parameters and the predetermined gain tilt parameters may be determined based on transmission characteristics of optical fibers. These predetermined parameters are computed as target values to rectify the output level variance of optical signals, a form of feed-forward control. For example, these parameters are appropriate for the specific fiber so that the feed-forward control is more correct than the feedback described in Hainberger which uses monitoring of power in each band with a photodiode (as shown in element 36 and 37 of Figure 8) and control of the Raman pump light source according to the total power of each band.

Because Hainberger does not anticipate all elements of claims 14-22, Applicants respectfully request the rejection of these claims. With respect to new claims 23-26, these claims inherit the limitations of their respective independent claims and are similarly not anticipated.

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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,


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